in said matrix material, wherein a thermal conductivity of said fillers is considerably higher than a thermal conductivity of said matrix material; and

at least a portion of said fillers comprising metallic fillers arranged to improve thermal conductivity of said elastic coating layer such that heat is dissipated toward the hard roller core and dissipated axially by the hard roller core, wherein the elastic coating layer has a smooth surface structured and arranged for smoothing paper webs,

wherein said elastic roller is formed with a length within a range of 3 to 12 m and a diameter within a range of 450 to 1500 mm and is structured to withstand compressive forces of up to 130 N/mm^2.

2. The elastic roller in accordance with claim 1, wherein said hard roller core comprises metal, and wherein said metallic fillers comprise metal.

4. The elastic roller in accordance with claim 1, wherein at least a portion of said metallic fillers comprises a metal foam.

5. The elastic roller in accordance with claim 4, wherein said metal foam is one of impregnated and filled with said elastic matrix material.

6. The elastic roller in accordance with claim 4, wherein said metal foam comprises pores which are at least partially filled with said elastic matrix material.

7. The elastic roller in accordance with claim 1, wherein at least a portion of said metallic fillers comprises a metal powder.

8. The elastic roller in accordance with claim 7, wherein said metal powder comprises one of nickel powder and chains of nickel powder.

9. The elastic roller in accordance with claim 7, wherein said metal powder comprises small particles having particle sizes of between approximately 5 to 50 μm.

10. The elastic roller in accordance with claim 9, wherein said particle sizes are between approximately 10 to 20 μm.

11. The elastic roller in accordance with claim 1, wherein at least a portion of said metallic fillers comprises one of metal fibers, metal rovings, metal-coated fibers, and metal-coated rovings.

12. The elastic roller in accordance with claim 11, wherein the at least a portion of said metallic fillers comprises one of metal-coated fibers and metal-coated rovings.

13. The elastic roller in accordance with claim 12, wherein fibers of said one of said metal-coated fibers and said metal-coated rovings comprise at least one of carbon and glass.

14. The elastic roller in accordance with claim 11, wherein at least a portion of said fibers is aligned in the axial direction.

15. The elastic roller in accordance with claim 14, wherein said at least a portion of said fibers comprises a predominant portion of said fibers.

16. The elastic roller in accordance with claim 11, wherein at least a portion of said

fibers is aligned in the radial direction.

17. The elastic roller in accordance with claim 16, wherein said at least a portion of said fibers comprises a predominant portion of said fibers.

18. The elastic roller in accordance with claim 11, wherein at least a portion of said fibers is aligned in statistical distribution.

19. The elastic roller in accordance with claim 18, wherein said at least a portion of said fibers comprises a predominant portion of said fibers.

20. The elastic roller in accordance with claim 11, wherein said fibers are arranged in one of a fiber layer and radially sequentially arranged fiber layers.

21. The elastic roller in accordance with claim 1, wherein at least a portion of said metallic fillers are elastically formed.

22. The elastic roller in accordance with claim 1, said elastic layer further comprising additional fillers arranged in said elastic matrix material.

23. The elastic roller in accordance with claim 22, wherein said additional fillers comprise fibers including at least one of carbon and glass fibers.

24. The elastic roller in accordance with claim 22, wherein said additional fillers comprise at least one of quartz and PTFE.

25. The elastic roller in accordance with claim 1, wherein said metallic fillers are arranged to extend up to a radially outer surface of said elastic matrix material.

26. The elastic roller in accordance with claim 25, wherein said metallic fillers are arranged to penetrate said radially outer surface.

27. The elastic roller in accordance with claim 1, wherein a radially outer surface of said elastic matrix material is coated with metal.

29. The elastic roller in accordance with claim 1, wherein a portion of said metallic fillers are arranged to extend radially inwardly up to a surface of said hard roller core.

30. The elastic roller in accordance with claim 1, wherein a thermal expansion coefficient of said metallic fillers is smaller than a thermal expansion coefficient of said matrix material.

31. The elastic roller in accordance with claim 30, wherein said thermal expansion coefficient of said metallic fillers is substantially the same as a thermal expansion coefficient of said hard roller core.

32. The elastic roller in accordance with claim 1, wherein said coating layer comprises a functional layer arranged in a radially outwardly region and a connecting layer arranged in a radially inwardly region,

wherein said connecting layer is adapted to connect said functional layer to said hard roller core, and

wherein said metallic fillers are arranged at least in said functional layer.

33. The elastic roller in accordance with claim 1, wherein said matrix material

comprises a plastic material.

34. The elastic roller in accordance with claim 33, wherein said plastic material comprises one of a thermosetting resin and a thermoplastic material.

35. The elastic roller in accordance with claim 1, wherein said matrix material comprises a resin-hardener combination.

36. The elastic roller in accordance with claim 1, wherein a concentration of said metallic fillers is substantially uniformly distributed within said elastic matrix material.

37. The elastic roller in accordance with claim 36, wherein said metallic fillers comprise metal powder.

38. The elastic roller in accordance with claim 36, wherein said metallic fillers comprise at least one of metal fibers and metal coated fibers.

39. The elastic roller in accordance with claim 1, wherein a concentration of said metallic fillers increases in a radially inwardly direction toward said hard roller core.

40. The elastic roller in accordance with claim 39, wherein said metallic fillers comprise metal powder.

41. The elastic roller in accordance with claim 39, wherein said metallic fillers comprise at least one of metal fibers and metal coated fibers.

42. (Twice amended) A process for producing an elastic roller that includes an elastic coating layer located on an outer side of a hard roller core, the process comprising:

imbedding metallic fillers into an elastic matrix material, wherein a thermal conductivity of the fillers is considerably higher than a thermal conductivity of the matrix material; and

applying the combined elastic matrix material and fillers onto an outer side of the hard roller core to form the elastic coating layer of the elastic roller, which has a length within a range of 3 to 12 m and a diameter within a range of 450 to 1500 mm,

wherein at least a portion of the fillers comprise metallic fillers arranged in the elastic coating to improve thermal conductivity of the elastic coating layer such that heat will be dissipated toward the hard roller core and dissipated axially by the hard roller core, and wherein the elastic coating layer has a smooth surface structured and arranged for smoothing paper webs, and the elastic roller is formed to withstand compressive forces of up to 130 N/mm^2.

43. The process in accordance with claim 42, wherein the hard roller core comprises metal.

44. The process in accordance with claim 42, wherein the metallic filler comprises a metal foam which is one of impregnated and filled with the elastic matrix material.

45. The process in accordance with claim 42, wherein the applying comprises forming at least one fiber bundle comprised of a plurality of one of metal fibers and metal-coated fibers, and winding the at least one fiber bundle onto the hard roller core.

46. The process in accordance with claim 45, wherein the winding includes winding several superimposed fiber layers on the hard roller core.

47. The process in accordance with claim 42, wherein the fiber bundle is formed by at least one of at least one fiber roving and a fiber fleece.

48. The process in accordance with claim 47, wherein the fiber bundle is formed by the at least one fiber roving, and each roving comprises a plurality of adjacently positioned fibers of a same kind.

49. The process in accordance with claim 47, wherein the fiber bundle is enveloped with the matrix material before being wound onto the hard roller core.

50. The process in accordance with claim 49, wherein the fiber bundle is pulled through a matrix bath.

51. The process in accordance with claim 47, wherein, before being wound onto the hard roller core, the fiber bundle or the individual fibers are coated with metal.

52. The process in accordance with claim 51, wherein the fiber bundle or the individual fibers are pulled through a metal bath.

53. The process in accordance with claim 47, wherein the fiber bundle or the fibers are wound onto the hard roller core in a substantially dry state, and

wherein one of during and after winding, the fiber bundle or the fibers are coated with at least one of the metal and the matrix material.